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ABSTRACT

This study examined effects of participation by single mothers (n=23) of young children with multiple disabilities in an early intervention program. It evaluated the mothers' perceived stress in child rearing, perceived ability to teach their children, and any correlation between parental stress and teaching capability. The mothers in the program and a comparable control group were given the Parenting Stress Index/Short Form and the Parent As A Teacher Inventory. The study found that the mothers who participated in the early intervention program perceived less stress in parenting than those who did not participate and displayed a more positive attitude toward teaching their children. Additionally, an inverse relationship between stress and teaching ability was found. (Contains 25 references. (Author/CR)

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EFFECTS OF AN EARLY INTERVENTION PROGRAM ON STRESS AND TEACHING ABILITY OF SINGLE MOTHERS OF YOUNG MULTIPLY IMPAIRED CHILDREN

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EFFECTS OF AN EARLY INTERVENTION PROGRAM ON STRESS AND TEACHING ABILITY OF SINGLE MOTHERS OF YOUNG MULITPLY IMPAIRED CHILDREN

Abstract

This study examined if single mothers of young, multiply impaired children, who participated in an early intervention program: (a) perceive less stress in child rearing, as demonstrated by the Parenting Stress Index/Short Form (PSI/SF), and (b) express a greater ability to teach their children, as demonstrated by the Parent As A Teacher Inventory (PAAT), and (c) exhibit a negative correlation between parental stress and teaching capability. The subjects consisted of two groups of single mothers; 23 in the intervention group, and 22 in the non-intervention group. Results indicated that the intervention group (a) perceived less stress in performing their parenting duties than their non-intervention counterparts, and (b) displayed a more positive attitude toward teaching their children. Additionally, there was an inverse relationship between stress and teaching ability in parents.

CHAPTER I
REVIEW OF LITERATURE

Parents of children with impairments are challenged beyond their traditional parenting roles; especially when multiple impairments affect a child's cognitive ability, fine and gross motor development, sensory capabilities, behavioral modes, and ultimately their social functioning. A number of studies have examined family stress of multiply impaired children. Many of these studies state that parents (usually mothers) of disabled children report higher levels of stress than parents without disabled children (Crowley & Taylor, 1994; Dunst, Jenkins, & Trivette, 1984; Hiester & Sapp, 1991; Kazak & Marvin, 1984; Krauss, Hauer-Cram, Upshur & Shonkoff, 1993; Krauss et al, 1989; and LaFreniere & Dumas, 1995).

Stress Factors

According to Breslau, Staruch, & Mortimer (1982); Wilgosh, Adams, Morgan, & Waggoner (1985); and Krauss et al (1993), family stress of multiply impaired youngsters include (a) increased marital stress, (b) strained financial conditions, (c) a need for parent education, (d) a large number of individuals within a household, and (e) the demands of the handicapped child's educational program, as well as the handicap itself. In similar studies researchers identified parents' needs for increased family support to address these stressors, as well as health care, recreation and socialization, and assessment of community resources and services (Able-Boone, Sandall, Stevens, & Fredrick, 1992; Cohen, Agosta, Cohen, & Warren, 1989; and Upshur, 1991; Travormina, Boll, Dunn, Luscomb, & Taylor, 1981; and Reichle & Thomas, 1987).

Likewise, a study of mothers who had girls with Retts Syndrome, suffered from a lack of recreational opportunities, limited independence for meeting their own needs, increased marital stress,

social isolation, and poor health. All of these factors are stress indicators (Perry, Sarlo-McGarvey, & Factor, 1992).

However, intervention programs provide support networks that act as buffers for coping with stresses encountered by families during daily routines (Able-Boone et al., 1992; Cohen & Syme, 1985; Taylor, White, & Kusmierek, 1993). According to Hauser-Cram et al., (1993), social support networks serve to counteract the sense of isolation that often accompanies parents of multiply impaired children. Also, mothers who participated more frequently in support groups were those who had experienced increased parental stress over the course of a 12-month study period.

Hadadian (1994), compared stress levels and effectiveness of support networks in families of children with and without disabilities, using the Parenting Stress Index (PSI). Researchers found higher levels of stress in families of multiply impaired children. There was a negative correlationship between the stress perceived in the child domain on the PSI and community support.

Furthermore, Hiester & Sapp (1991), found that a combination of poor parenting skills, high maternal stress, and low social support, create insecure, resistant attachment of mother toward child. These mothers also indicated that their children did not meet their expectations, and were much more difficult to manage. Accordingly, social support networks promote positive parent-child interactions, positive parental perceptions of the child, and indirectly influence child behavior (Dunst, 1985; Dunst & Trivette, 1989).

LaFreniere et al. (1995), using the PSI, grouped mothers with very high, high, average, and low percentile scores to determine levels of parenting stress associated with maternal stress and parental control.

Results indicated that children of low stress mothers engaged in significantly less controlling behavior during laboratory tasks than very high stress mothers.

Hence, support networks for families, as part of the intervention process, became a focus as early intervention programs were established (Hauser-Cram et al., 1988). Consequently, English-speaking and Bangladeshi mothers of disabled children who participated in a support group via an early intervention program showed significant positive changes in perceiving their children as less difficult, and more independent and affectionate. These findings were attributed to an intervention program that provided parent education methods to help parents adapt to their situations (Davis & Rushton, 1991).

Educational Intervention

Parents described characteristics of helpful intervention that would help them to better understand their children's unique educational needs. These characteristics include (a) providing information about their child in understandable terms, (b) teachers who use an individualized approach that considers the child's own strengths and weaknesses (as identified in the Individualized Educational Plan), and (c) teachers who present activities that can be incorporated into household routines, such as mealtime or bathtime (Able-Boone et al., 1992).

Behl, White, & Escobar (1993), identified a high-intensity intervention program as one that offered weekly services, home-based instruction, and parent-child oriented sessions, tailored to their own needs. The intervention also incorporated activities into daily routines, such as feeding and diapering. Functional household items

were utilized in addition to developmentally appropriate toys. Lastly, educational assessments, information on community agencies, and medical consultation, by a nurse, were also provided.

The early intervention program utilized in this study possessed all of the qualifications described in this high-intensity intervention program. Additional components to this program are discussed later.

Despite the large number of publications concerning handicapped children and their families, the dynamics of stress and the impacts of intervention, few researchers have investigated the implications of intervention on stress and on parental teaching abilities. This study extended the literature base on this topic, and as a result led to the following questions.

Research Questions

1. Do single mothers of young multiply impaired children who participate in early intervention programs perceive less stress in childrearing, as demonstrated by a significantly lower mean score on the Parenting Stress Index/Short Form (PSI/SF), than their non-intervention counterparts?
2. Do single mothers of young multiply impaired children who participate in early intervention programs exhibit a greater ability to teach their children as demonstrated by a higher score on the Parent As A Teacher Inventory (PAAT), than their non-intervention peers?
3. What will be the correlation between parental stress, when measured by the Parenting Stress Index/Short Form (PSI/SF), and mothers' teaching abilities, when measured by the Parent As A Teacher Inventory (PAAT)?

CHAPTER II

Method

Subjects

The subjects consisted of 45 single mothers of multiply handicapped children. These children had a combination of various disabilities including severe mental impairment, blindness or vision impairment, hearing impairment, speech impairment, physical impairment, and/or health impairment. The children of these mothers were enrolled in a severely multiply impaired special education program, ages 3 to 26 years old, in an urban midwestern public school.

The 45 subjects made up two predetermined groups. Twenty-three of the forty five mothers had children who had previously participated in the district's voluntary early intervention outreach program, for 1 to 1.5 years prior to enrollment in the multiply impaired program. This group of mothers from henceforward will be referred to as the "intervention group." This voluntary early intervention program, enrolling children between the ages of 0 to 3 years, provided services for families of the children identified as, or suspected of having a disability.

Mothers who participated in this program received a comprehensive range of services. Among which were functional assessments of their children's intellectual, medical, physical and visual motor, and communication levels. Parents worked one-on-one with a team of professionals, who provided individualized instruction to their children included teachers, speech therapists, physical and occupational therapists, school psychologists, and nurses. These services were implemented in the home and school setting to elicit parent involvement, as part of a parenting skills training component.

The parenting skills training was structured to help parents incorporate the daily childcare routine into their lives. These mothers were taught concepts in child development, how and why toy/object selections and play are significant, how to plan activities that promote skill building, and communication techniques (for the non-verbal child). Additionally, mothers were introduced to an array of community agencies designed to assist them with health services, procurement of adaptive equipment, respite care, and financial resources. The intervention group was contrasted with twenty-two mothers, the "non-intervention group", who had never enrolled their children in an early intervention program prior to enrollment in the multiply impaired program.

All mothers were selected from a convenient sample of children serviced by the first author. Permission to interview the mothers was given by the school district. The children represented a cohort group, with ages ranging from 4.1 to 6.3 years, with a mean of 4.9 years. Mothers in both groups were single parents, with incomes evenly distributed within the low to moderate levels ($10,000 to $25,000). Educationally, both groups were similarly matched. The intervention group possessed high school diplomas at (23%), post high school training (42%), one to two years of college (29%), and a four year degree (2%). The non-intervention group possessed high school diplomas at (25%), post high school training (45%), one to two years of college (29%), and a four year degree (1%). The ethnic make-up of the intervention group consisted of 86% African American, 12% Anglo American, and 2% Middle Eastern, while the non-intervention group was 100% African American.

Measures

The Parent As A Teacher Inventory (Strom, 1984), a self-reporting survey, was designed to reveal how parents felt about certain aspects of the parent-child interactive system, their standards for assessing the importance of various child behaviors, and their value preferences concerning child behavior. The Parent As A Teacher Inventory (PAAT) responses were categorized into subscales related to five areas of parent curriculum: (a) creativity- parents' acceptance or rejection of the creative functioning in their child, (b) frustration- parental childrearing anxiety and the situations that attributed to this anxiety, (c) control- parental feelings about control and the extent to which it was deemed necessary, (d) play- parental understanding of the significance of play and its influence on child development, and (e) teach/learn- parents' perception of their ability to teach their child.

The 50-item instrument was divided into 10 items per subscale. Items were arranged so that one from each subscale occurred once every five questions. For example, number one was from the creativity subscale, number two was from the frustration subscale, number three was from the control subscale, number four was from play, and number five was from teach/learn. A four-point scale was used to score the responses, with a one to four range for each item. "The most desired response, based upon child development research was valued four, with diminishing values assigned to other responses on the basis of their distance from the most desirable. The most desirable response to item thirty-nine was 'strong no.'" (Strom, 1984, p.8)

After assigning values to each item, totals were derived for each subscale by adding values within each subscale. Subscale totals ranged from a low mean of 10 to a high mean of 40. The average mean of 25 for any subscale was used as the midline to differentiate between

desirable and undesirable parental attitudes based on child development research. Total PAAT scores were interpreted as desirable and undesirable based on whether they exceeded or fell below a mean of 125.

The Parenting Stress Index/Short Form (PSI/SF) also a self-reporting instrument was intended to identify stress in the parent-child system. The PSI/SF (Abidin, 1990), was a 36-item survey scale that consists of a total stress score derived from three subscales, as well as the subscale scores. The subscale categories included: (a) parental distress, (b) parent-child dysfunctional interaction, and (c) the difficult child.

The first subscale, parental distress, "taps the distress a parent is experiencing in his/her role as parent as a function of personal factors that are directly related to parenting" (Abidin, 1990, p.19). The second subscale, the parent-child dysfunctional interaction "focuses on the parent's perception that his/her child does not measure up to the parent's expectations and that the interactions with their child are not reinforcing to him/her as a parent. These parents project the feeling that their child is a negative element in their life" (Abidin, 1990, p. 20). The third subscale, the difficult child, "focuses on some of the basic behavioral characteristics of children which make them either easy or difficult to manage. These characteristics are often rooted in the temperament of the child, but they also include learned patterns of defiant, non-compliant, and demanding behavior" (Abidin, 1990, p. 21).

Subscale scores were obtained by reversing the score for each response given. For example, a response of 5 was given a score of 1, 4 received 2, 3 remained 3, 2 received 4, and 1 received 5. A total stress score was obtained by adding the three subscale scores together.

Procedure

Mothers who participated in the survey were assigned to either the intervention or non-intervention group. Mothers in the intervention group had children who had been previously enrolled in the district's early intervention program, while the non-intervention group had not.

The early intervention program provided weekly instruction services to handicapped children in their homes and in the center based setting. Parents had to agree to bring their children into the center on a monthly basis to allow parents and staff an opportunity to assess the child's performance level and pre-readiness skills in a school environment. The early intervention program provided diagnostic assessment and educational intervention, as well as monthly educational meetings, a lending library of toys, books and videos, opportunities for social interaction with other parents, professional assistance and transportation as needed.

To conduct the survey, the mothers received, via their child, a letter requesting their participation in the study. Of the 50 letters that were sent out, 45 mothers agreed to an interview during follow-up telephone confirmations. In appreciation for their time and cooperation, parents were given free coupons to a dollar movie theatre, upon completion of the interview. The 50-minute interviews took place at the parents' homes. The parents were interviewed, by the first author, using the Parent As A Teacher Inventory (PAAT), and the Parenting Stress Index/Short Form (PSI/SF). To counteract the order effect the PAAT and PSI were administered interchangeably, beginning with the PAAT 50% of the time, and vice versa with the PSI. Upon

completion of the surveys, scores were compiled and entered on individual profile sheets. However, individual surveys were kept anonymous to preserve the parents' privacy.

Parents who desired results of the study were given group composites of the subscales and total mean scores. The results were promptly disseminated to parents, via their children, upon completion of the study. Finally, parents were invited to contact this researcher if they needed any professional assistance in the areas of community and agency resources, curriculum planning, or program placement.

CHAPTER III

Results

Hypotheses 1: Single mothers of young multiply impaired children who participate in an early intervention program perceive less stress in childrearing, as demonstrated by a significantly lower mean score on the Parenting Stress Index/Short Form (PSI/SF), than their non-intervention counterparts.

Table 1

Parenting Stress Index/Short Form (PSI/SF) Subscale Scores

	Intervention		Non-Intervention			
	M	SD	M	SD	I	P
Parental Distress	22.91	6.230	30.95	6.904	-4.10	.000
Parent-Child D.I.	27.96	6.664	32.05	7.834	-1.88	NS
Difficult Child	34.87	8.730	37.45	9.323	- .96	NS
PSI/SF	85.74	17.305	100.64	20.982	-2.59	.013

In Table 1, a t-test of the PSI total subscale score had a significant difference at $p<.013$. The intervention group had a $M=85.74$ and $SD=17.305$, while the non-intervention group had $M=100.64$ and $SD=20.982$. A higher mean score indicated a higher stress level for the non-intervention group. The Parental Distress subscale, for the intervention group had a $M=22.91$, and a $M=30.95$ for the

non-intervention group. Within the Parental Distress subscale the intervention group demonstrated significantly less stress than their non-intervention peers. The Parent-Child Dysfunctional Interaction and Difficult Child subscales demonstrated non-significant differences in mean scores. Refer to Figure 1 in Appendix D for pictorial representation. Hence, hypothesis 1 was supported.

Hypothesis 2: Single mothers of young multiply impaired children who participate in an early intervention program exhibit a greater ability to teach their children, as indicated by a significantly higher total score on the Parent As A Teacher Inventory (PAAT), when compared to their non-intervention peers.

Table 2

Parent As A Teacher Inventory Subscale Scores

	Intervention		Non-Intervention			
	M	SD	M	SD	T	P
PLAY	31.65	3.737	27.91	2.202	4.11	.000
TEACH/LEARN	31.91	3.777	27.50	3.004	4.35	.000
CREATIVE	27.61	2.231	25.86	1.699	2.96	005
CONTROL	27.35	1.898	25.64	2.787	2.40	.022
FRUSTRATION	27.83	3.055	26.41	2.873	1.60	NS
PAAT TOTAL	144.81	12.63	133.23	10.21	3.30	.002

In Table 2, note a t-test of the PAAT total with a M=144.81, for the intervention group, and M=133.23 for the non-intervention group. There was a significant p<.002. The PAAT subscale total for the intervention group had a SD=12.63, and a SD=10.21 for the non-intervention group. The subscales Play, Teach/Learn, Creative, and Control fell within the significant probability range favoring the intervention group. However, the subscale Frustration demonstrated non-significant gains. Subscales for Play and Teach/Learn were highly significant at p<.000. The Creative and Control subscales were significant at p<.005 and p<.022, respectively. See Figure 2, in Appendix E, for a pictorial representation. These findings support hypothesis 2.

Hypothesis 3: There will be a significant negative correlationship between parental stress, as measured by the Parenting Stress Index/Short Form, and mothers' teaching abilities, as measured by the Parent As A Teacher Inventory.

Table 3

Correlation Matrix of Significant Levels of Subscale Scores and Totals for the PAAT and PSI

	PD	PCDI	DC	PSI/SF total
TEACH/LEARN	-.56*	-.51**	-.39*	-.57**
CONTROL	-.43	-.51**	-.49**	-.56**
PLAY	-.38*	-.36*	-.25	-.38*
CREATIVE	-.34	-.13	-.22	-.27
FRUSTRATION	-.28	-.14	-.05	-.17
PAAT TOTAL	-.41*	-.32	-.26	-.39*

*p < .01 **p < .001

Table 3 correlated the Parenting Stress Index/Short Form (PSI/SF) and the Parent As A Teacher Inventory (PAAT). Results indicated a significant negative correlation between the PSI/SF and PAAT totals ($r=-.39$, $p<.01$). A significant correlation between the Parental Distress (PSI) and the PAAT total ($r=-.41$, $p<.01$). There is also a significant correlation between PSI/SF totals and PAAT subscales, Teach/Learn ($r=-.57$, $p<.001$), Control ($r=-.56$, $p<.001$), and Play ($r=-.38$, $p<.01$). A significant negative correlation between the Teach/Learn (PAAT) and PSI/SF subscales, Parental Distress ($r=-.56$, $p<.001$), Parent-Child Dysfunctional Interaction ($r=-.51$, $p<.001$), and Difficult Child ($r=-.39$, $p<.01$). A significant negative correlation also exists between Control (PAAT) and PSI/SF subscales, Parent-Child Dysfunctional Interaction ($r=-.51$, $p<.001$), and Difficult Child ($r=-.49$, $p<.001$). The last significant negative correlation exists between Play (PAAT) and PSI/SF subscales Parental Distress ($r=-.38$, $p<.01$), and Parent-Child Dysfunctional Interaction ($r=-.36$, $p<.01$).

Discussion

This early intervention program followed the Guidelines for the Provision of Special Education Services for Infants and Toddlers with Handicaps, which was prepared by the Early Intervention Academy of the Wayne County Regional Educational Service Agency. To implement these guidelines, the early intervention program provided the following services within the instructional setting: (a) health care, provided by nurses, and occupational and physical therapists, (b) financial conditions were addressed when staff assisted parents with the completion of forms and identification of appropriate support agencies, (c) speech therapists and school psychologists provided additional education services, and (d) support group sessions allowed parents to socialize and communicate with other parents sharing similar concerns.

As indicated in a previous study (Hadadian, 1994), there was a negative correlationship between community support and parental stress. Likewise, the support group sessions provided by the early intervention program may have helped improve Parental Distress scores on the PSI. Although there were significant findings within this subscale, the same was not true with the Parent-Child Dysfunctional Interaction and Difficult Child subscales. Hence, a parent has the ability to change their personal situations, thereby influencing their attitudes regarding personal stressors. However, no degree of training or support can alter the immutable feelings of disappointment associated with having a multiply impaired child. These feelings and unfulfilled expectations may have contributed to the non-significant scores in the subscales Parent-Child Dysfunctional Interaction and Difficult Child (PSI), and the Frustration subscale (PAAT).

Mothers who participated in the early intervention program had higher scores in the Play, Teach/Learn, Creativity, and Control subscales, than their non-intervention peers. To explain how the early intervention program may have contributed to these findings it was necessary to examine their delivery approach. The program used the Activity-Based Intervention (ABI) approach (Bricker & Cripe, 1992). This child-directed, transactional approach embeds children's goals and objectives in 3 major elements; routine, planned, and child-initiated activities. The first element, routine activities approach, described what Able-Boone et al. (1992), identified as helpful intervention methods. These activities referred to typical household events that occur regularly, such as meals, dressing, and toileting. Early intervention staff worked with parents on how to use these opportunities to teach new skills to their children. A early intervention teacher expressed greater success training parents to teach their children skills during routine activities, than non-routine activities. Parents explained that they felt greater confidence teaching what they had experience doing. The teacher felt that beginning parent training with routine activities provided a good reference base.

Activity-Based Intervention emphasized teaching activites that were functional in nature (such as teaching children to wash their hands), which permitted children to experience their environment in a socially acceptable manner. The fact that parents felt more confident teaching routine activities could have contributed to increased Teach/Learn subscale scores on the PAAT. Teachers also used these routine activities to teach parents about child development. For example, a lesson where a child learned to remove a lid from a jar was used to teach a parent to observe the child's fine-motor abilities.

Although the primary goal of routine activities was to assist the child in acquiring functional skills (Bricker et al., 1992), it also provided mother and child an opportunity to play at a level comfortable for mother. This comfort level could have increased the mothers' Play subscale scores.

The second element, planned activities referred to events that were arranged by adults, and carried out by children. These activities were designed to interest children, while targeting specific skills. An example of a planned activity would be planting seeds. The instructor supplied the seeds, soil, and pot (Bricker et al., 1992). The procedure must be planned by the instructor. Parents who planned and organized activities for their children gained a degree of confidence in teaching. The PAAT specifically addressed questions pertaining to parents' comfort levels for teaching and playing with their children.

The third element of ABI was child-initiated activities. Children who initiated and sustained an activity had an inherent interest in that activity (Bricker et al., 1992). Creativity was exhibited on the part of the children who initiated the activity. The creative subscale on the PAAT was designed to gauge parents' acceptance or rejection of the creative nature in their children. Parents in the intervention group displayed a higher Creative subscale score than non-intervention mothers. These findings could have resulted because early intervention teachers encouraged a stimulating environment, rich with colors, objects, and sounds. This sensory rich environment promoted creativity.

According to LaFreniere et al. (1995), parents with low stress levels have less need to engage in controlling behavior. Similarly, intervention parents in this study also experienced less stress, which could have contributed to a favorable Control subscale score.

A correlation between the PSI & PAAT subscales indicated that as mothers stress levels decreased, their teaching abilities increased, and vice versa.

In conclusion, this study established that early intervention programs for multiply impaired children and their families can reduce stress and foster teaching abilities in parents. These benefits ultimately impact upon parents' responsibility as their children's "first teacher."

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